HAND WIRED
GUITAR AMPLIFIERS

USER MANUAL

PETITE 2 • PETITE 5 • COTTON CLUB 7/15 • COTTON CLUB 15/30 • SPEAKEASY • CLASSIC LEAD

WELCOME TO HAYDEN HAND-BUILT GUITAR AMPLIFICATION

Thank you for choosing a Hayden hand-wired guitar amplifier. To ensure that you receive the full benefits of the Hayden warranty, please register your amplifier at www.haydenamps.com

WARRANTY

Your amplifier is covered by a a one year warranty, against defects in materials and workmanship, for the original purchaser. Hayden will, at their discretion, replace or repair any product or part thereof, which is found by Hayden to be defective. This warranty shall not apply to the damage of covering, fittings or finishes when affected by carelessness, accident or extreme climate changes. Nor does it apply to normal wear and tear of parts such as valves, fuses, light bulbs, speakers, controls etc.

In the unlikely event of any defect, please contact an authorised Hayden dealer. All transport charges are to be pre-paid by the Owner. Unless your purchase is registered on-line, normal country warranty laws apply.

DESIGN AND BUILD PHILOSOPHY

In Hayden's UK hand-wired guitar amps, we have set out to capture what it was that made the now so desirable vintage amps so great in the first place.

The Hayden amplifiers are hand-built in the UK using appropriate construction methods to create guitar amps of distinctive, yet familiar tone, at affordable prices.

Hayden amps are designed to meet the modern guitarist's need for an amplifier that is reliable, easy to set up, and consistently delivers a good core tone from which to work. The gain ranges are kept with sensible parameters, allowing the player to integrate a wide range of pedals into the set-up. On multi-channel amplifiers, the switching and controls are kept simple, while still retaining flexibility. Where fitted, effects loops will accommodate the input and output levels of a wide variety of pedals and external processors, while larger Hayden amps feature valve-driven and recovered, footswitchable sends and returns for maximum signal integrity. And because all footswitchable functions are accessed by a single footswitch, they always remain accessible, even in the event of a footswitch failure.

Hayden hand-wired guitar amps feature valve circuitry from start to finish – indeed semi-conductors are only used in the power supply and footswitching circuits.

Transformers are comfortably over-specified and thermally protected for long-term reliability, and chassis are constructed from non-magnetic and corrosion-resistant stainless steel.
Where appropriate, printed circuit boards are used, with a variety of techniques employed to maximise the advantages of each construction method as follows:

Tag Board
Gold plated tags are inserted into the printed circuit board and the components soldered to the tags, ensuring all the benefits of this traditional construction system without the tiny interconnecting wires which can be prone to breaking.

Tag Board NT
As above but without the tags, components are soldered into eyelets within the board, allowing replacement without removing the board.

Full PCB
Used on the larger, more complex amplifiers, only small signals and currents pass through the tracks, with heaters, anodes, etc. hard-wired off the board. This approach provides the consistency and repeatability of PCBs, without the arcing risks normally associated with this type of construction. Once again, components that are prone to damage can be easily accessed without removing the boards.

IMPORTANT SAFETY INSTRUCTIONS

This Hayden amplifier has been designed to provide you with many years of faithful service – on the road, in a studio or in a domestic environment. By following the rules set out below, you will ensure that the unit functions safely.

Valve (tube) instrument amplifiers contain very high voltages and fragile glass tubes and should therefore be handled with care. A number of important precautions which must be observed are set out below.

Before using the amplifier, run through the check list below. If you are in any doubt about any aspect of the amplifier's operation, stop using it immediately and do not resume operation until the amplifier has been thoroughly inspected by a qualified technician.

1) Storage and moving

When your amplifier is not in use make sure that the power cord is unplugged from the mains outlet, and that all leads are removed from the amplifier, including jack leads and footswitch leads. Jack socket connectors are self-cleaning, so the process of plugging in and unplugging the leads when not in use will ensure that the internal contacts will be cleaned when you plug in again.

Store your amplifier in a warm, dry place away from moisture and condensation. A motor vehicle or cellar may look dry but condensation can form inside the unit causing short circuits and possible electric shock. If you suspect the amplifier may have become exposed to moisture, move it to a warm dry place and leave it to dry out for at least 48 hours before attempting to use it.

Condensation can also occur when you move the amplifier from a hot humid place (such as a nightclub) to a cold place (like a motor vehicle). In such instances, always move the amplifier into a warm dry room to prevent damage.

When moving the amplifier, handle it as carefully as you would your instruments. Although solidly built, an amplifier is easily damaged by shock, so be careful not to drop it or allow it to fall over. Use a protective cover to protect the finish and, if you are transporting it with other equipment, make sure that the amplifier is on a solid floor at the bottom of the pile.

Amplifiers are heavy. Take care when lifting, always use the handles fitted to the amplifier to move it, and get help if you have to lift the amplifier to a greater height than you feel comfortable with.

Never attempt to operate the amplifier after it has been dropped. Take it to a qualified technician and have it checked before using it again.

2) Leads and plugs

Your amplifier contains possibly lethal voltages and must therefore be connected to the mains using the correct power cord, which is a three terminal type with a ground connection.

The power cord supplied with the unit should be of the correct type. If it does not fit your mains outlet consult your dealer or a qualified electrician for advice before attempting to use the amplifier.

Never modify the power cord or attempt to use it with a two pin outlet. Store all your leads in a dry case and take care when packing them away. All leads, including guitar leads, are easily damaged with careless handling, so it is a good idea to carry a spare lead of every type you use. Flexible power cords get damaged very easily. At the first sign of damage, discard it and purchase a new one. Always replace the power cord with one of the same type. Moulded cords are the best choice with both plugs permanently fitted to the cord.

When using your amplifier and other equipment it is a good idea to connect to the supply using a unit known as an R.C.D. These units are not expensive and offer the user additional protection against electric shock. An electrical shop should be able to supply you with a suitable unit.

IMPORTANT SAFETY INSTRUCTIONS - CONTINUED

3) Before Use
Inspect your amplifier for damage before use. Check each lead for damage before you plug them in to the amplifier, and ensure that the loudspeaker is connected before you switch the amplifier on.

Never try to operate the amplifier without the speaker connected. If you do, serious damage to the amplifier will result which will be very expensive to repair.
Double check the connections you have made to your amplifier and make sure you have connected the speaker to the correct outlet socket that matches the cabinet you are using. The impedance of the speaker is important and is usually shown on a plate affixed to the back of the cabinet, so if the cabinet is 16R (Ohms) then you plug into the 16R outlet on the amplifier. (See additional notes on this subject later in the manual).

4) Using the amplifier
When you set the amplifier up for use, it is important that you adhere to the following rules:

Place the amplifier away from sources of heat, including radiators, etc. The amplifier itself will get hot in normal use.

Make sure that all the grilles on the amplifier are not obstructed in any way so that cooling air can circulate through the amplifier. Do not place anything on or behind the amplifier that might restrict the flow of air. This includes items of clothing, or other equipment.

Do not place the amplifier in such a position where it may get splashed with liquid or water, e.g. near tables of drinks or near equipment that contains water, e.g. smoke and bubble machines

Never stand bottles or containers of liquid on the amplifier. If any liquid is accidentally spilled into the amplifier, unplug it from the mains supply immediately and take the amplifier to a qualified technician for inspection.

Do not place objects on the amplifier that could fall inside and cause a malfunction, e.g. coins, tools, etc.

5) Sound level
The level of sound or 'volume' you choose to use will mainly be dependant on the size of the room you are playing in and you should use the volume level that gives you the desired results. Always operate the amplifier at the lowest level you can in any given situation. Each room will have a sweet spot. Play at too low a level and the instrument will not react with the amplifier, too high and the instrument will be unplayable. In all cases you should use a level that you feel comfortable with.

The Human ear is a very sensitive instrument and can easily be permanently damaged by exposure to the high sound pressure levels that can be produced by this type of amplifier. Do not operate for prolonged periods of time at high volume without suitable ear protection, or at a level that causes you discomfort in any way.

If you experience any hearing loss or ringing in the ears you should consult a doctor or audiologist.

6) Fuses and ratings
Your amplifier is fitted with several fuses to protect yourself and the expensive electronics inside from damage in the event of a malfunction within the amplifier. The size and rating of the fuses bas been calculated to offer the most protection from damage possible.

Various circumstances can lead to fuse failure. It is recommended that you familiarise yourself with the type and rating of the individual fuses fitted to your amplifier and carry spare fuses clearly marked with you as replacements. Occasionally a fuse will fail as a result of a power surge in the supply or as a result of incorrect connection of the loudspeaker. It is permissible to replace the damaged fuse with one of the same type and rating as stated on the rear panel of the amplifier, having first unplugged the amplifier from the mains supply and allowed it to cool down. If the fuse keeps blowing this indicates that there is a more serious fault within the amplifier such as a damaged tube. In this event you must take the amplifier to a qualified technician for repair.

Never fit a fuse larger than the recommended rating.
The fuses fitted to you amplifier are 'Anti Surge' or 'Slow Blow' or 'Time delay' type fuses, and have the the prefix T or H in the part number. So, for example, a 5 Amp fuse would be T 5A H. The exact rating for each particular fuse can be found next to the holder in which that fuse fits. If you are not sure what to buy when purchasing replacements, take the amplifier with you and show the rear panel to the retailer.

7) Warnings used on this equipment

The exclamation mark contained within a triangle is intended to alert the user to important operating and servicing instructions contained in the literature accompanying this product.

The lightning flash within a triangle is intended to alert the user to the presence of un-insulated dangerous voltage within the product enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

This highlights the presence of dangerous voltages within the equipment enclosure. Never try to operate the unit out of the enclosure.

8) Grounding Instructions

This product must be grounded (earthed). If it should malfunction or break down the grounding provides the path of east resistance for the electric current, to reduce the risk of electric shock.

This product is equipped with a power cord which contains a grounding conductor and a grounding plug. The plug must be plugged into a compatible mains outlet that is properly installed and grounded in accordance with the local electrical safety codes applicable to your country.

DANGER!! Improper connection of the grounding conductor can result in the possibility of an electric shock. If you are in any doubt about the ground connection check with a qualified electrician before using this product. NEVER modify the mains power cord. Have a suitable mains outlet fitted!

The wires contained within the supplied power cord are colour coded as follows:

GREEN & YELLOW – GROUND OR EARTH CONDUCTOR
BROWN – LIVE CONDUCTOR
BLUE – NEUTRAL CONDUCTOR

9) Other markings

Other markings appear on the rear panel of the amplifiers as follows: back of the amplifier has some other markings on it as follows;

Directs you to recycle this product by taking it to a disposal area for electronic waste when you have finished with it, and not dispose of it in the normal household waste.

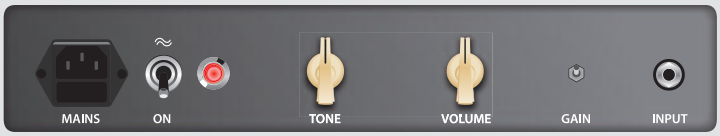
Indicates that the product contains only the permitted levels of substances known to be hazardous to your health.

Indicates that the product has been constructed to European Harmonised Standards and is intended to show that the product is safe to use. At present, the manufacturer can self-certify.

Relates to an independent safety testing laboratory and shows that the product has been subjected to, and passed, a series of safety and quality tests and indicates that the product meets all the criteria for sale in Canada and the USA.

Note:
The CE mark attached to these products means it conforms to EMC(89/69/EEC) ,(93/68/EEC) and LDV(72/23/EEC).

PETITE 2 - Front Panel



PETITE 5 - Front Panel

COTTON CLUB 7/15 - Front Panel

COTTON CLUB 15/30 - Front Panel

SPEAKEASY - Front Panel

CLASSIC LEAD - Front Panel

CONTROLS AND CONNECTIONS

Depending upon which Hayden amplifier you own, you'll find a variety of controls and connecting sockets on the front and, in some cases, back panels (described below). We encourage you to spend time experimenting with the controls to discover the tones available.

Input
This is where you plug in your instrument, or the output from your pedal board if appropriate. The input is very sensitive and can be easily overloaded. If you find you cannot clean tone, reduce the level by turning down the instrument or the output from the last pedal in the chain connected.

Gain
Gain is another name for a volume control that's usually found at the front end of a preamplifier. The Gain control is used to vary the amount of signal passing through the preamp. With the control set low you will be able to get clean tones (used in conjunction with the Master as described later). Increasing the gain allows more signal to pass through the preamp, causing the preamp to overdrive and distort. The exact degree of distortion depends on the model of amplifier you have, the level of the signal from the instrument and whether you have any pedals in front of the amplifier.

Volume
Where fitted at the front of the preamp, Volume usually controls the overall loudness of the whole amplifier and applies to channels that are intended to be used to give a clean tone. Volume or Pre or Chan Vol controls the amount of output from the particular preamp that they are fitted to and therefore allows you to balance the outputs of individual preamps in multi channel units.

Pickup, Shade, Voice
These controls allow you to vary the tone of the preamp before the sound arrives at the equalisation circuit and very useful for varying the overall balance of the sound. On clean tones it is possible to thin the sound out to a bright jangle, or fill the sound out for a rich full bodied feel. When you have a lot of gain dialled in on the pre amp, you can use the control to get rid of mush and unwanted pick thump, adding the bass back in with the EQ later. On multi channel units these controls can be used to get one channel bright so that it cuts through, and another fat for a mean rhythm sound for example.

Bass, Middle, Treble, Presence
This is the equalisation part of the amplifier, and these controls shape the overall response of the amplifier. Balancing these controls can provide you with a large range of tones from which to work. All the controls are interactive (moving one will alter the way the others' functions) and you should spend some time experimenting to find out what's available.

On all Hayden amplifiers the EQ circuit is fitted between the preamp and the power amp. This means that at all volume levels the EQ will remain fully operational right up to the point where the power amp starts to distort. When this happens the EQ will be less effective as the power amp stamps its own mark on the overall tone.

Master
Where fitted, the Master Volume controls the final amount of signal that is fed to the power amp and therefore the overall volume of the amplifier. On multichannel units, dual masters allow the overall volume of each channel to be varied – set one for a rhythm level and one for a solo level for example.

On single channel units the Master works in conjunction with the Gain control, and on multi channel units each Master works in conjunction with the gain control associated with it (Gain I + Master I). In any event the following applies:

For clean tones the Master needs to be fully up, controlling the overall volume with the Gain control. On lower power amplifiers you can do this to get power tube distortion by overdriving the power amp whilst the pre amp remains clean.

For distortion tones at controllable levels on higher power units, turn the Master down and the Gain up. Varying the Gain will control the amount of distortion and the Master will control the overall level of the sound.

CONTROLS AND CONNECTIONS – CONTINUED

Effects loop
Where fitted, the FX loop is positioned between the preamp and the Master, and is designed to work with both pedals and rack mount units. Careful thought should be given to the type of effects you plug into the loop. As a general guide, place effects in the loop that you want to work on the whole of the sound such as flange, chorus and reverb for example.

Swell pedals can be used in the loop for dynamic control of the overall volume level, in addition to any footswitching you may have fitted.

Boost
Where fitted, a Boost control will do just that – boost the signal running through the preamp. At low gain settings, the Boost control will increase the volume of the amplifier as well as any distortion you may have from the preamp. At high gain settings, the effect will be less, contributing only to the overall amount of distortion. Again you need to experiment to find the settings that suit your playing style.

Reverb
Where fitted, this controls the amount of reverb and has the effect of putting some 'space' around the sound, and to add a little sparkle and life to the tone. Reverb is typically used for clean and light crunch tones. The Hayden reverb is all valve with a traditional spring reverb tank. Avoid using too much, or acoustic feedback may result.. there is more than enough under normal use.

Note that the reverb is not available on the drive channel on two channel amplifiers.

SPECIAL FEATURES FITTED TO SOME HAYDEN AMPS

2V - Mute - 4V and 6L6 - EL34 Switch
These switches enable the player to switch between a pair of EL34 or 6L6 output tubes (in the 2V position), each of which have their own distinctive sound. The difference is quite subtle on clean tones, but more pronounced when the tubes are overdriven. In 2V mode, the power output is around 35 Watts.

Switching to 4V drives all four power tubes for a maximum output of around 50 Watts. Moving the selector switch to the central Mute position silences the amplifier (useful when changing strings, instruments, etc.)

30W - 15W and 15W - 7W
Where fitted, these switches perform the dual task of reducing the final output by approximately 50%, while at the same time turning the amplifier into a single-ended amplifier (by turning off the drive to one half of the amplifier).

Mute
This switch silences the amplifier for tuning or instrument changing, or when the band takes a break but you want to keep the amp 'cooking'. It is not the same as Standby switch and the amplifier should not be kept in this mode for hours on end.

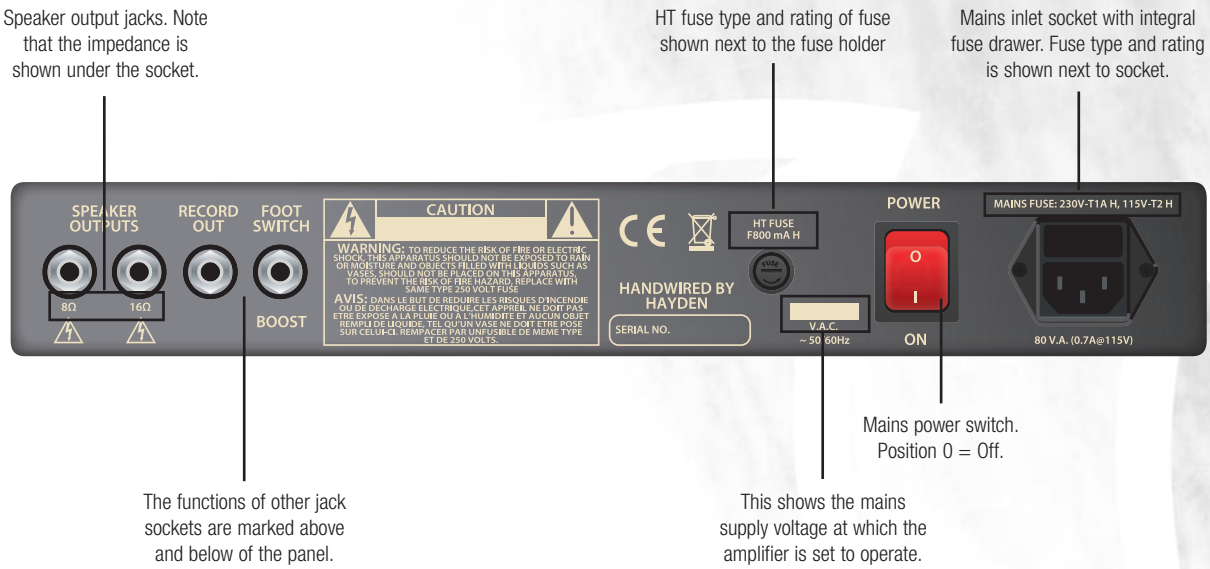
Loop level
Where fitted, these controls allow you to alter the level of signal coming from the FX loop, and returning to the amplifier from the FX loop.

Damping
Damping controls the way in which the amplifier reacts to the speaker cabinet by altering the amount of sound returned to the power amp by the cabinet. This mainly influences the bass content of the sound. At low settings, the bass is loose and prominent, and the overall tone responsive and natural. At higher settings, the bass is tighter and more controlled, while the amplifier is more precise and seemingly less responsive.

FX insert (single jack)
This is a stereo jack connector which carries both the FX send and return signals. A stereo jack to 2 x mono jack cable should be used to connect the input and output of the FX to the amplifier via this single socket.

REAR PANEL

The panel illustrated (Petite 5) can be used as a guide to the facilities of all Hayden hand-wired amplifiers.



RECORD YOUR INFORMATION

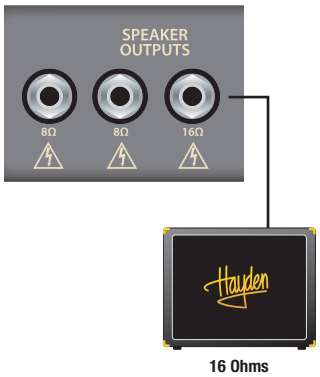
You should us this space to record all the important information off the rear panel of your amplifier for future reference.

MODEL:
SERIAL NO:
DATE OF PURCHASE:
SUPPLY VOLTAGE:
MAINS FUSE:
HTFUSE:

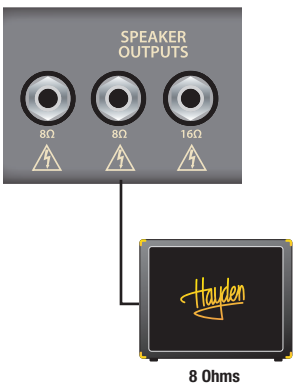
SPEAKER IMPEDANCE

The importance of speaker impedance has been mentioned elsewhere in this manual, so you should refer to the diagram below before plugging any speaker cabinets into your amplifier. Heads may be used with one or more cabinets. When using external cabinets with combos, the internal speaker should be unplugged from the amplifier panel, and alternative cabinets should be plugged in as shown.

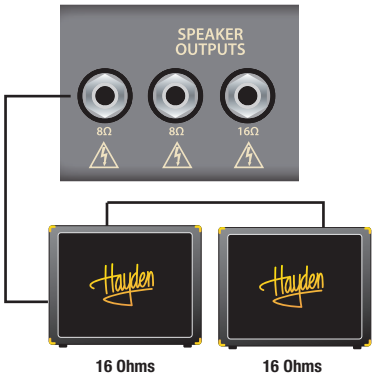
Single Cabinet 16 Ohms



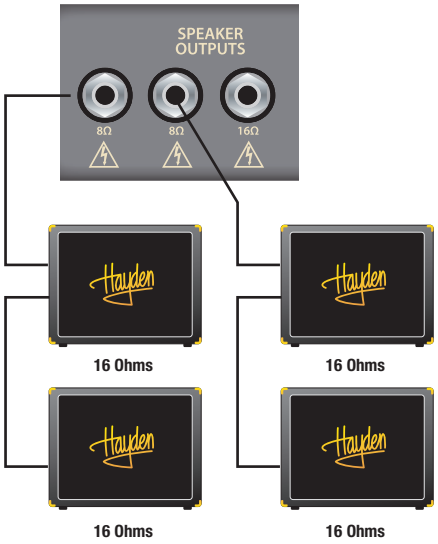
Single Cabinets 8 Ohms



Dual Cabinets 8 Ohms



Quad Cabinets 16 Ohms



Note that the combined impedance of two 16 Ohm cabinets is 8 Ohms, so there are two 8 Ohm jacks on the rear of the heads.

Combos are designed to run either with the internal speaker or an alternative, external cabinet rated at either 8 Ohms or 16 Ohms. When using an external cabinet, the internal speaker should be unplugged.

Never switch on an amplifier without a speaker connected.

Unique to the Petite 5 is a Record Out facility. With a jack connected to this socket, it is permissible to unplug the internal speaker for silent recording as a load is automatically connected when this facility is in use.

HINTS AND TIPS

Okay, so you've read the manual and you're ready to get started. Here are some further ideas to help you realise the full potential of your Hayden guitar amp.

During a live performance or recording, you'll often need to go from a clean to a crunch tone, and then on to a more saturated solo sound. Traditionally this is done by setting up one channel for the rhythm tone and then turning the guitar down to get the clean tone, and boosting the rhythm tone to go to the solo sound. This worked fairly well but the clean tone was always a little lacking in volume. A neat trick to get round this limitation is to turn the Master up full and set the Gain up for the best clean tone, then use a drive pedal to set up a rhythm tone, using the output level on the pedal as the second master volume to balance both the clean and crunch tones. Solo is then obtained either by a channel change or by boosting the rhythm tone. This little dodge will work on single or twin channel amplifiers.

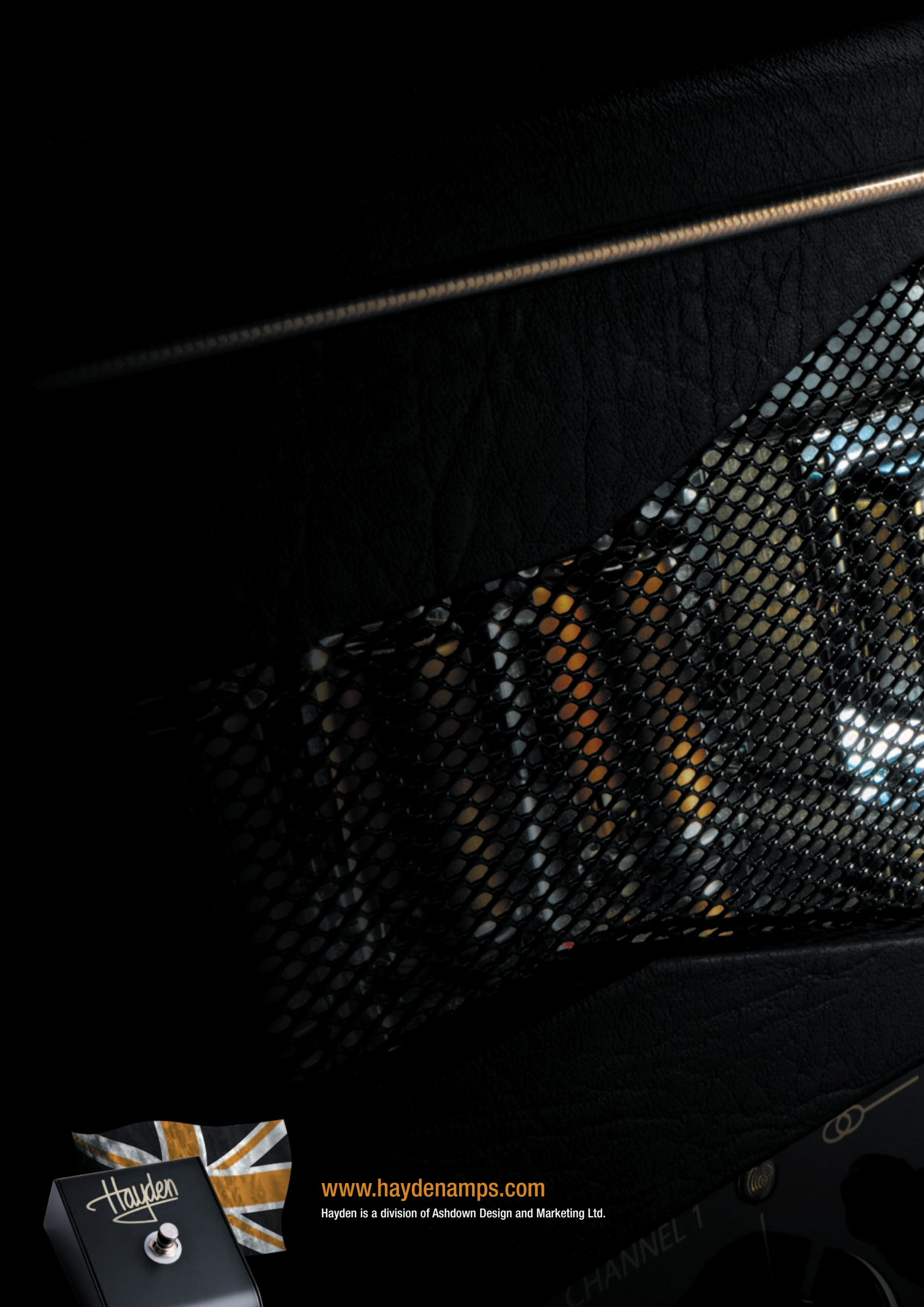
Another little trick you might find useful that works with either the Speakeasy or the Classic Lead 80 is to place a simple boost pedal in the FX loop and set it up so that you have a clean boost. You then have a third master volume which can be used to give a volume boost to either channel by simply activating the loop on the footswitch. The pedal is positioned near the amp and once set is left in the boost position. You can also use a simple volume control pedal for the same effect. If you have a few preset effects that you would normally use in the loop you can site these near to the amplifier and not have all those wires crossing from the amp to your pedal board and back again.

Most players like a touch of reverb on a clean tone for that little extra sparkle but, when it comes to drive sounds, opinions are divided. The Speakeasy does not have reverb on the drive channel but here is a work-around if you are one of the players that likes reverb on your solo sound. Set up channel 1 clean and loud with the desired amount of reverb and set channel 2 for the rhythm sound. Then, using a drive pedal, set the solo sound to run through channel 1 ... simple!

Processor pedals work well with any of the Hayden range but you have to be aware that the input is very sensitive. You will get the best tone from this type of pedal by setting the master up full and running the preamp low so that it does not distort, so you may have to adjust the output level from the pedal so that it does not overdrive the preamp.

Both the Speakeasy and Classic Lead 80 can be set up for silent recording. To do this, run a jack lead from the FX send to the desk with the FX loop turned on. The power amp will now be disconnected from the preamp and may be switched into the mute position. The sound level coming from the amp to the desk can be controlled by the master volumes on the amp and monitoring takes place through the desk.

Hum/noise can result from bad positioning of the amplifier, so avoid computers, flouresent lights dimmers, and low voltage halogen lights, all of which radiate hum. Mobile phones, home hubs and wireless local networks all create interference and central heating boilers and refrigerators can create pops and bangs when they turn on and off. If you find you are suffering from any of these noises, try turning things off to find the culprit, but don't forget to turn them on again when you have finished playing.



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